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10/559,642

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Daniel Joubert

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EXAMINER

REDDY, KARUNA P

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,642

Applicant(s)

JOUBERT ET AL.

Examiner

Karuna P. Reddy

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 25-47 is/are rejected.
- 7) ☒ Claim(s) 32-41 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

1. Preliminary amendment filed on 12/2/2005 is made of record. Claims 1-24 are cancelled and claims 25-47 are added. Claims 25-47 are currently pending in the application.

Claim Objections

2. Claims 32 and 35 are objected to because of the following informalities:

Claims 32 (line 2) and 35 (line 2) recite "polymer dispersion (latex)". Use of parenthesis in the claim to define a limitation in an alternative manner is not recommended under current U.S. practice.

3. Claims 33-34 have different punctuation marks i.e. ", ;" for separating the Markush grouping. For internal consistency within the claim, applicant is advised to use same punctuation mark throughout the claim.
4. Claims 32, 34, 37-38 list an improper Markush grouping. Proper Markush grouping is listed either as "selected from A, B, C or D" or alternatively "selected from the group consisting of A, B, C and D". See MPEP 2173.05(h).
5. Claims 36-41 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 36 recites a formula for monomer (II): $(R^2)(R^3)C=C(R^5)(R^6)$ with all the alkyl substituents optionally comprising heteroatom and R^3 substituted optionally with OR^4 . The inclusion of heteroatoms or OR^4 in claim 36 and recitation of ethers such as isobutyl vinyl ether in claim 41 is broader than the recitation of hydrocarbon monomer in claim 25. It is noted that hydrocarbon by definition consists exclusively of elements hydrogen and carbon.

Claim 36 recites a formula for monomer (I): $(R^1)(R^1)C=C(R^1)-COOH$ while dependent claims 39 and 40 recite anhydrides which do not conform to the formula of monomer(I) recited in claim 36.

Claim 38 is dependent on claim 36 and is subsumed by the objection to claim 36.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 44 and 46-47 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Betremieux et al (US 6, 054, 526).

Betremieux et al disclose latex which results from the polymerization of a mixture of hydrophobic monomers composed of styrene and (meth)acrylic esters to produce an emulsion in an aqueous solution of a water-soluble amphiphilic copolymer (abstract). The hydrophobic monomers undergoing polymerization in the amphiphilic oligomer solution may be either styrene or the derivatives thereof, a (meth)acrylic ester or a mixture of these monomers (column 2, lines 32-37).

The amphiphilic oligomer is preferably a copolymer of one or several

hydrophobic monomers from the group comprising isobutylene or the derivatives thereof, and (meth)acrylic esters, and one or several hydrophilic monomers from the group comprising (meth)acrylic acid and maleic anhydride. See example 2, wherein the latex is formed from styrene and butyl acrylate while the amphiphilic oligomer is composed of styrene and maleic anhydride. The fineness of the dispersion of the composite latexes makes them highly prized in various fields in which effective impregnation of a substrate and a degree of water-repellency are required: paints for concrete, cement, plaster, tiles. The invention also concerns solvent-free paints which incorporate these composite latexes as film-forming auxiliaries (column 3, lines 24-39).

It is noted that claim 44 is a product-by-process claims and therefore "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In light of the above, it is clear that [ref] anticipates the presently cited claims.

Alternatively, in the event any differences can be shown for the product of the product-by-process claims of 44, as opposed to the product taught by Betremieux et al, such differences would have been obvious to one of ordinary

skill in the art as a routine modification of the product in the absence of a showing of unexpected results. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Claim 46 and 47 stand properly rejected as they are dependent on claim 44.

Claim Rejections - 35 USC § 103

10. Claims 25, 27-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betremieux et al (US 6, 054, 526) in view of Schwartz et al (US 2001/0007711 A1).

Betremieux et al disclose latex which results from the polymerization of a mixture of hydrophobic monomers composed of styrene and (meth)acrylic esters to produce an emulsion in an aqueous solution of a water-soluble amphiphilic copolymer. The mass percentage of amphiphilic copolymer in relation to dry extract of the latex is between 10 and 50% (abstract). The hydrophobic monomers undergoing polymerization in the amphiphilic oligomer solution may be either styrene or the derivatives thereof, a (meth)acrylic ester or a mixture of these monomers (column 2, lines 32-37). The amphiphilic oligomer is preferably a copolymer of one or several hydrophobic monomers from the group comprising

isobutylene or the derivatives thereof, and (meth)acrylic esters, and one or several hydrophilic monomers from the group comprising (meth)acrylic acid and maleic anhydride. See example 2, wherein the latex is formed from styrene and butyl acrylate while the amphiphilic oligomer is composed of styrene and maleic anhydride. The fineness of the dispersion of the composite latexes makes them highly prized in various fields in which effective impregnation of a substrate and a degree of water-repellency are required: paints for concrete, cement, plaster, tiles. The invention also concerns solvent-free paints which incorporate these latexes as film-forming auxiliaries (column 3, lines 24-39).

Betremieux et al is silent with respect to a method of applying the coating to mineral binder; wt% of amphiphilic copolymer and mineral binders such as fly ash.

However, Schwartz et al teach a method of coating a concrete molding which comprises the application of at least one plastic. The plastic comprises at least one aqueous polymer dispersion (abstract). The aqueous polymer dispersions give mineral coatings which do not flake and which at the same time do not impair the process of setting of the mineral composition. The polymer present in the aqueous polymer dispersions includes styrene/butadiene copolymers (paragraph 0035-0036). The invention also provides a process for producing mineral coatings on concrete roof tiles embracing the following steps: 1) producing an uncoated concrete roof tile and 2) applying a plastic onto the concrete roof tile while the tile is still moist (paragraph 0067-0069). The wet

concrete used preferably comprises, besides cement, portland cement, conventional aggregates such as fly ash (paragraph 0072). Therefore, it would have been obvious to apply coating while the mineral binder of Betremieux et al is still wet because Schwartz et al teaches coating of tiles, with composition comprising aqueous dispersion while still wet, for above mentioned advantages i.e. coatings which do not flake and which at the same time do not impair the process of setting of the mineral composition.

With respect to wt% of amphiphilic copolymer, it is the examiner's position that the amount of amphiphilic copolymer is a result-effective variable (MPEP 2144.5) since the amount used clearly affects hydrophobic / hydrophilic nature of the dispersion. Hence, the choice of a particular amount of amphiphilic copolymer (such as the amount in present claims) is a matter of routine experimentation and would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

11. Claims 25 and 27-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz et al (US 2001/0007711 A1) in view of Betremieux et al (US 6, 054, 526).

Schwartz et al disclose a method for coating a concrete molding which comprises application of at least one plastic wherein the said plastic composition comprises at least one aqueous polymer dispersion (abstract). The aqueous polymer dispersion is selected from the polymer built from ethylenically

unsaturated monomers M, embracing from 90 to 99.9% by weight of at least one hydrophobic, monoethylenically unsaturated monomer M1, selected from styrene, butadiene, C₁-C₄ alkyl esters of methacrylic acid and the C₂-C₁₂ alkyl esters of acrylic acid and from 0.1 to 10% by weight of at least one hydrophilic, monoethylenically unsaturated monomer M2 embracing up to 2% by weight of one or more monoethylenically unsaturated monomers having at least one acid group (paragraph 0015-0018). The polymer present in the aqueous polymer dispersions is selected from the following classes of polymers i) styrene/butadiene copolymers, ii) styrene/C₂-C₁₂ alkyl acrylate copolymers and iii) C₁-C₄ alkyl methacrylate/C₂-C₁₂ alkyl acrylate copolymers (paragraph 0035-0038). Examples of these monomers M2 are firstly the monomers M2a, selected among monoethylenically unsaturated monocarboxylic acids, preferably having from 3 to 6 carbon atoms e.g. acrylic acid and methacrylic acid, monoethylenically unsaturated dicarboxylic acids preferably having from 4 to 8 carbon atoms e.g. itaconic acid and methylene maleic acid (paragraph 0040). The invention also provides a process for producing mineral coatings on concrete roof tiles embracing the following steps: 1) producing an uncoated concrete roof tile and 2) applying a plastic onto the concrete roof tile while the tile is still moist (paragraph 0067-0069). The wet concrete used preferably comprises, besides cement, portland cement, conventional aggregates such as sand, fly ash (paragraph 0072).

Schwartz is silent with respect to amphiphilic copolymer and its weight percent.

However, Betremieux et al teaches latexes without conventional surfactants because of the water-sensitivity of emulsions after film formation in the presence of surfactants (column 1, lines 6-9). The latex which results from polymerization of a mixture of hydrophobic monomers composed of styrene and (meth)acrylic esters is produced as an emulsion in an aqueous solution of a water-soluble amphiphilic copolymer (abstract). By virtue of the compromise between the properties of water-soluble amphiphilic copolymer and those of the monomers undergoing polymerization, a finely-particulate dispersion which is stable over time and whose coalescent films are not overly sensitive to water is obtained (column 2, lines 7-12). The hydrophobic monomers undergoing polymerization in the amphiphilic oligomer solution may be styrene or the derivatives thereof, a (meth)acrylic ester or a mixture of these monomers (column 2, lines 32-37). The amphiphilic oligomer is preferably a copolymer of one or several hydrophobic monomers from the group comprising isobutylene or the derivatives thereof, and (meth)acrylic esters, and one or several hydrophilic monomers from the group comprising (meth)acrylic acid and maleic anhydride. See example 2, wherein the amphiphilic oligomer is composed of styrene and maleic anhydride. Therefore, it would have been obvious to replace the surfactants of Schwartz et al with amphiphilic copolymers of Betremieux et al for the above mentioned advantages.

With respect to wt% of amphiphilic copolymer, it is the examiner's position that the amount of amphiphilic copolymer is a result-effective variable (MPEP 2144.5) since the amount used clearly affects hydrophobic / hydrophilic nature of the dispersion. Hence, the choice of a particular amount of amphiphilic copolymer (such as the amount in present claims) is a matter of routine experimentation and would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

12. Claims 26 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz et al (US 2001/0007711 A1) in view of Zuckert et al (EP 305795 A2).

The discussion with respect to Schwartz et al in paragraph 11 above is incorporated here by reference.

Schwartz et al is silent with respect to graft polymer made by esterification.

However, Zuckert et al teach graft polymers which can be obtained by grafting the monomers onto the fatty acid polyol ester or by esterifying the fatty acid graft polymer using polyols. The emulsions are suitable for air drying, water-dilutable paints and road marking paints. They are distinguished by fast surface drying and good film properties (abstract). Therefore, it would have been obvious to add the graft polymer of Zuckert et al to the aqueous polymer dispersion of Schwartz et al, for above mentioned advantages.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karuna P Reddy
Examiner
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